Calendar No. 510

100TH CONGRESS *1st Session*	SENATE	REPORT 100-267

TRUCK AND BUS SAFETY ACT OF 1987

Mr. HOLLINGS from the Committee on Commerce, Science, and Transportation, submitted the following

REPORT

OF THE

SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ON

S. 861

DECEMBER 19 (legislative day, DECEMBER 15), 1987.—
Ordered to be printed

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S263-32

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

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Calendar No. 510

100TH CONGRESS
1st Session

SENATE

REPORT
100–267

TRUCK AND BUS SAFETY ACT OF 1987

DECEMBER 19 (legislative day, DECEMBER 15), 1987.—Ordered to be printed

Mr. HOLLINGS, from the Committee on Commerce, Science, and Transportation, submitted the following

REPORT

[To accompany S. 861]

The Committee on Commerce, Science, and Transportation, to which was referred the bill (S. 861) to require certain actions by the Secretary of Transportation regarding certain drivers of motor vehicles and motor carriers, having considered the same, reports favorably thereon with an amendment in the nature of a substitute and recommends that the bill as amended do pass.

PURPOSE OF THE BILL

The bill as reported would require the Secretary, in the interest of safety, to eliminate, within 12 months of enactment, the commercial zone exemption for commercial drivers and equipment from the Federal Motor Carrier Safety Regulations (FMCSR). The bill would also require the Secretary to complete a rulemaking within 12 months of enactment on the need to adopt methods, such as onboard recording devices, for monitoring truck drivers' compliance with hours of service rules. Finally, the Secretary would be required to examine the need to adopt methods for improving truck braking performance, including antilock systems, brake compatibility improvements, and methods for ensuring effective brake timing.

BACKGROUND AND NEEDS

Truck and bus (motor carrier) safety has been an issue of continuing concern to the Committee. The Committee has conducted numerous hearings and reported legislation on this issue in the 95th through the 99th Congresses.

Last year, Congress passed the Commercial Motor Vehicle Safety Act of 1986, which calls for the formation of a national uniform

system for licensing commercial drivers. That legislation details a number of procedures which State licensing agencies must adhere to, including: minimum testing standards, a system of "disqualification" for driver drug and alcohol use and repeat violations, and development of a one-license, one-record system for commercial drivers. It also tripled the money available for state motor carrier safety inspection grants (from $16,250,000 to $50 million).

Despite such efforts, over 5,000 Americans are killed in heavy truck and bus accidents each year. S. 861 addresses three motor carrier safety problems that contribute to this toll:

1. *Eliminating the Commercial Zone Exemption.*—The FMCSR establish safety rules for commercial drivers and equipment operating in interstate commerce. The Department of Transportation (DOT) has exempted commercial drivers and equipment operating solely within metropolitan areas known as commercial zones from the FMCSR.

This exemption no longer makes sense. When Federal regulation of interstate trucking was implemened in 1935, local truck operations were limited, drivers operated within a few miles of their home bases, and speeds and traffic volumes were considerably lower than they are today. The conditions under which these vehicles and drivers operate have changed dramatically over the years. It is now widely agreed that highway safety is not advanced by allowing vehicles operating in interstate commerce within commercial zones to continue to operate without complying with the FMCSR, especially in light of increased traffic, speeds, and operating territories.

Washington, DC's Capital Beltway is an example of one of these commercial zones. According to the American Trucking Associations, approximately 120,000 vehicles pass a given point on the Capital Beltway each day. About 12,000 of these are commercial vehicles, and they are involved in more than 11 percent of the accidents on the Capital Beltway.

One particularly tragic example of the safety hazards associated with the current commercial zone exemption was the November 1986 Maryland crash in which two high school girls were killed in a collision involving an exempted dump truck with numerous safety violations. In fact, an interim report on an Office of Technology Assessment study found that commercial vehicles operating solely within commercial zones are more likely to be in violation of safety standards than other commercial vehicles.

2. *Controlling Hours of Service Abuse With Onboard Monitoring Devices.*—Under existing Federal safety regulations, commercial drivers are not supposed to drive more than 10 hours at a stretch or 60 hours a week. Many drivers exceed these limits because of economic pressures. Drivers who ignore these limits are likely to become fatigued. This can present safety problems. An Insurance Institute for Highway Safety study released on September 16, 1987, indicates that drivers at the wheel for more than 8 hours at a stretch are nearly twice as likely to be involved in a crash as drivers who have been at the wheel less than 2 hours.

Currently, drivers are required to record their driving time in log books. There is widespread falsification of these records. The Federal Government conducted 18,966 safety inspections in 1984.

Twenty-four percent of these inspections revealed hours of service violations, including trucks with no logs, incorrect logs, and related violations. State inspections show similar problems. Tennessee conducted 15,000 truck inspections in the first 6 months of 1986. One-third of the drivers Tennessee checked had no log books or had incorrect log books.

An alternative to the ineffective log book system is the onboard recorder. These monitoring devices are capable of mechanically or electronically recording driver and equipment performance, including driving time and speed. It is widely thought that these devices have the potential to increase fuel efficiency, reduce speeding, and facilitate billing, as well as substantially curtail violations of hours of service requirements. The Europeans have used tachographs, a mechanical type of recorder, since the 1930's. Since 1971, European Common Market countries have required heavy commercial vehicles to have a tachograph. A number of U.S. companies are using tachographs, and others are using onboard computers as recorders.

3. *Improving Truck Braking Performance.*—In March 1987, DOT completed a Congressionally ordered study of truck braking performance. The study concluded that among all vehicle-related topics, efforts to improve truck brake systems should receive the highest priority. The study estimated that brake system performance could be involved as a contributing factor in up to one-third of all truck accidents.

A number of safety groups believe that a major method of improving truck braking performance would be the use of antilock braking systems. An antilock system prevents sustained lock-up of any wheel under its control. Without antilock, a driver who tries to brake his vehicle too quickly faces the problems of jackknifing and steering loss.

DOT wrote a rule requiring antilock brakes in 1975. There were complaints that the antilock brakes available at that time were subject to radio signal interference that was said to result in sudden activation without warning. The antilock requirement was struck down by the courts in 1978 when truckers succeeded in proving that some of these systems had failed.

New technology is widely thought to have addressed these problems. Antilock braking systems manufacturers maintain that these systems preserve the stability and steerability of a vehicle during braking and minimize stopping distance under all types of road conditions. Sensors on each wheel continually measure the wheel speeds during braking, and this information is transmitted to an electronic processor which senses when a wheel is about to lock. A modular valve quickly adjusts the brake pressure to prevent wheel locking.

This new generation of antilocks is widely used in Great Britain and on the European Continent. Approximately 80 percent of all new truck trailers over 20,000 pounds sold in the United Kingdom since 1982 have antilock brakes. The Europeans are putting the finishing touches on an agreement that would require antilock brakes on all new tractors and trailers beginning in 1989 or 1990. Austria already requires antilock brakes on hazardous materials trucks.

LEGISLATIVE HISTORY

On March 26, 1987, Senator Danforth introduced, on behalf of Senator Adams and himself, the Truck and Bus Safety Act of 1987 (S. 861), which was referred to the Committee. Subsequently, Senators McCain, Wilson, Stafford, Kassebaum, Mikulski, Kasten, Chiles, Simon, and Dodd were added as cosponsors.

On July 15, 1987, the Surface Transportation Subcommittee held a hearing on S. 861, as well as on S. 747, legislation to create a Motor Carrier Administration at DOT. The subcommittee heard testimony on S. 861, as originally introduced, from DOT and representatives of the truck and bus industries, labor, the insurance industry, and public interest/safety groups.

On November 19, 1987, the Committee met in open executive session to consider S. 861, by voice vote agreed to an amendment in the nature of a substitute, and ordered the bill, as amended, to be reported favorably.

SUMMARY OF MAJOR PROVISIONS

As reported, S. 861 would:

1. Direct DOT to eliminate by rule, within 12 months of enactment, the commercial zone exemptions in the FMCSR. DOT could waive certain of the FMCSR's driver medical requirements for current commercial zone drivers who have not been shown to have operated unsafely in the past.

2. Direct DOT not later than 3 months after the date of enactment to initiate a rulemaking on the need to adopt methods for improving truck drivers' compliance with hours of service regulations, including vehicle onboard monitoring devices. The rulemaking would have to be completed within 12 months of enactment.

3. Direct DOT to report to Congress by September 30, 1988, on the need to adopt methods for improving truck braking performance. The report would cover issues including antilock systems, brake compatibility, and effective brake timing. In addition, by October 31, 1988, the relevant Congressional authorizing committees would be required to conduct oversight hearings to obtain public testimony on the report. Finally, DOT would have to commence a rulemaking no later than December 1, 1988, to be completed by September 30, 1989, on the need to adopt methods for improving truck braking performance.

ESTIMATED COSTS

In accordance with paragraph 11(a) of rule XXVI of the Standing Rules of the Senate and section 403 of the Congressional Budget act of 1974, the Committee provides the following cost estimate, prepared by the Congressional Budget Office.

U.S. CONGRESS,
CONGRESSIONAL BUDGET OFFICE,
Washington, DC, December 4, 1987.

Hon. ERNEST F. HOLLINGS,
Chairman, Committee on Commerce, Science, and Transportation, U.S. Senate, Washington, DC.

DEAR MR. CHAIRMAN: The Congressional Budget Office has reviewed S. 861, the Truck and Bus Safety Act of 1987, as ordered reported by the Senate Committee on Commerce. Science and Tranportation, November 19, 1987. CBO expects that enactment of this bill would not result in significant cost to the federal government, but could impose some additional costs on state and local governments.

S. 861 would require the Department of Transportation (DOT) to initiate rulemaking proceedings in three areas. First, the bill would direct DOT to amend motor carrier safety regulations to remove the existing exemption for carriers and drivers operating solely within commercial zones. Under current law, DOT has jurisdiction over the safety of all interstate motor carriers, but has exempted those operating solely within certain urban areas, known as commercial zones. This requirement would not significantly add to DOT's workload, because the agency is already completing regulations eliminating this exemption.

The bill would also direct DOT to complete a rulemaking proceeding, within one year after enactment of S. 861, on the need to adopt methods for improving compliance with hours of service regulations. This proceeding would have to consider the use of vehicle onboard monitoring devices. Again, DOT has already initiated a rulemaking proceeding in this area, so this requirement should not pose an additional burden.

Finally, S. 861 would require DOT to prepare a report to Congress before September 30, 1988 on the need to adopt methods to improve brake performance standards for trucks and truck trailers, and follow this report with a rulemaking proceeding. Part of the National Highway Traffic Safety Administration's (NHTSA) fiscal year 1987 appropriation was earmarked for field testing new brake technologies for heavy trucks, and it is likely that this will be followed by a rulemaking proceeding. CBO does not expect this new requirement to result in a significant increase in DOT's workload, although it would require NHTSA to accelerate its activities relating to truck brakes.

The primary responsibility for enforcement of federal motor carrier safety regulations rests with states through the Motor Carrier Safety Assistance Program. As noted above, DOT is already pursuing new regulations concerning the commercial zone exemption and onboard monitoring devices, which will affect state enforcement requirements. CBO cannot estimate the impact of this bill on the states, because we cannot predict the outcome of either those rulemaking proceedings required by the bill, or those that will occur in the absence of legislation.

If you wish further details on this estimate, we will be pleased to provide them.

With best wishes,
Sincerely,

EDWARD M. GRAMLICH,
Acting Director.

REGULATORY IMPACT STATEMENT

In accordance with paragraph 11(b) of rule XXVI of the Standing Rules of the Senate, the Committee provides the following evaluation of the regulatory impact of this legislation.

Number of persons covered

There is no exact public or private census of commercial vehicles and drivers currently operating in exempt commercial zones. An estimate can be derived by putting serveral numbers together, however. The FMCSR currently cover all interstate operations of commercial vehicles with a gross vehicle weight rating (g.v.w.t.) of 10,000 pounds or more except those that are being operated exclusively within a commercial zone. In 1985, there were 5,300,000 U.S. registered vehicles with a g.v.w.t. of 10,000 pounds or more. According to the Federal Highway Administration, in 1985 there were approximately 1,400,000 U.S. registered tractor semitrailers. In the vast majority of cases, these tractor semitrailers are being operated beyond a commercial zone. If one assumes that about half of the remaining 4 million 10,000 pound g.v.w.t. vehicles are being used beyond commercial zones, that leaves about 2 million vehicles operating exclusively within commercial zones. There would be approximately one driver for each of these 2 million vehicles. This means that there are an estimated 2 million current commercial zone drivers who would be covered by the bill.

The bill's provisions concerning compliance with hours of service rules and improved braking performance are directed at truck semitrailers. Thus, using the Federal Highway Administration's estimates, these provisions would concern approximately 1,400,000 vehicles and 1,400,000 drivers.

Economic impact

The bill does not call for any additional government spending beyond administrative costs associated with the DOT research and reporting requirements contained in the bill, of which most have been previously funded or to some degree initiated.

The bill will require DOT to eliminate the commercial zone exemption safety loophole. This should have a beneficial effect on the Nation's economy by reducing motor carrier accidents in these populated areas.

The bill may also require DOT to upgrade or establish truck safety standards concerning onboard monitoring devices and brakes. Estimates of the cost of the mechanical tachograph recorders range from $300–$600 each. An estimate given by DOT of the cost of electronic onboard monitoring devices was approximately $1,000 for each device per vehicle. The price tag for antilock systems currently or soon to be on the market range from approximately $500 to $5,000. It is widely anticipated that these costs will decrease as more companies begin marketing the onboard recorder

and antilock systems and demand increases. The Committee expects that any costs incurred by the trucking industry in complying with new or upgraded safety standards will be offset by reduced costs from truck-involved accidents as well as proposed reductions in insurance costs for those companies using the antilock systems.

Privacy

The bill will have no adverse impact on the personal privacy of the individuals affected.

Paperwork

This bill should require limited additional paperwork for DOT and may reduce paperwork for trucking companies. Section 3 of the bill requires DOT to conduct a rulemaking to eliminate the commercial zone exemption. DOT opened an advanced notice of proposed rulemaking (ANPRM) on commercial zone exemptions on January 23, 1985. It issued a Notice of Proposed Rulemaking on this subject on July 13, 1987. To the extent that DOT's efforts are consistent with this bill, they can be used in complying with its requirements.

Under section 4(a) of the bill, DOT is required to initiate and complete within 12 months of enactment a rulemaking on the need for methods to improve truck drivers' compliance with hours of service rules, including the need for onboard monitoring devices. On July 13, 1987, DOT issued an ANPRM concerning onboard recording devices. Again, to the extent these efforts are consistent with S. 861, they can be used to comply with the bill's requirements. Moreover, if onboard recorders partially or completely replace the existing paper log book system, this could reduce the paperwork burden on trucking companies.

Section 4(b) requires a DOT report to Congress on methods for improving truck braking performance, including antilocks, and a rulemaking on the need for antilocks and other truck brake improvements. Much of the work needed for this report has commenced or will shortly commence. DOT is currently studying the European and Australian experience with antilocks. In addition, DOT received $1,250,000 in the fiscal year 1987 appropriation for a fleet test of antilocks.

SECTION-BY-SECTION ANALYSIS

Section 1—Short Title

The "Truck and Bus Safety Act of 1987" is the bill's short title.

Section 2.—Definitions.

(1) Driver—this term is defined as it is under the Code of Federal Regulations (C.F.R.). 49 C.F.R. section 390.11 defines "driver" as any person who drives any motor vehicle.

(2) Motor Carrier—this term is defined as it is in the C.F.R. 49 C.F.R. section 390.15 defines "motor carrier" to include a common carrier by motor vehicle, a contract carrier by motor vehicle, and a private carrier of property by motor vehicle.

Section 3.—Eliminating the Commercial Zone Exemption.

(a) Elimination of the Exemption.

By statute, DOT has jurisdiction over the safety of all interstate motor carriers. DOT'S FMCSR, 49 C.F.R. subchapter B, establish minimum qualification requirements for commercial drivers (e.g., a prohibition on alcohol consumption 4 hours before reporting to duty) and commercial equipment (e.g., brake standards, lighting standards) that travel in interstate commerce. DOT has exempted from Federal safety regulations interstate commercial drivers and equipment that are operating solely within a populated area, known as a commercial zone. *See* 49 C.F.R. section 390.16, 390.33 and 1048. Washington, DC's Capital Beltway is an example of one of these commercial zones. Other examples of exempt commercial zones include the areas around Chicago, New York City, Kansas City, and St. Louis. Under section 3(a) of the reported bill, the Secretary is required to eliminate these exemptions by regulation within one year of enactment of this legislation, subject to the exception provided in subsection (b).

(b) and (c) Exception for Existing Current Commercial Zone Drivers.

Currently, drivers who operate in interstate commerce, unless they operate solely within a commercial zone, must meet a variety of physical requirements including: having no loss of a foot, leg, hand, or arm; no history of diabetes requiring insulin control; no serious cardiovascular disease; no respiratory dysfunction; no diagnosed epilepsy; at lest 20/40 corrected vision in both eyes; and no serious hearing problems.

Section 3(b) of the reported bill would permit a current commercial zone driver with one of these disabilities to continue driving commercially within a commercial zone if he receives a waiver under subsection (c) from the Secretary. In order to receive a waiver a driver would have to meet several conditions enumerated in subsection (b). He must have driven commercially within an exempt commercial zone for a year. His commercial driving must have been exclusively within the zone. During the year period that the driver was operating within the commercial zone, he cannot have been subject to the medical requirements of the FMSCR. The driver must also have had a license entitling him to drive commercially within the zone prior to the bill's enactment.

Driver safety would also bve a factor in granting the waiver. Under subsection (c), an existing commercial zone drive would receive a waiver, after notice and opportunity for public comment, if in the past he had not unsafely operated. In making this determination, the Committee intends that the Secretary should carefully examine the current safety record of these drivers. It is not the intent of the Committee that this law will result in the unnecessary or unwarranted unemployment or disqualification of safe drivers. The Committee intends only to remove drivers who have a demonstrable driving record detailing a pattern of serious violations. It would be *prima facie* evidence that a driver had not operated unsafey in the past if he held a license that was not suspended, revoked, or cancelled at the time this legislation became effective.

The Committee further intends that drivers who at the time of enactment are disqualified, suspended, or whose license is revoked, whether under Federal statute and regulation or under any applicable State standard, will not qualify for this exemption. Before granting a waiver, the Secretary must determine under subsection (c) that a waiver would not be contrary to the public interest and is consistent with the safe operation of commercial motor vehicles. Subsection (c) further provides that a driver's waiver would continue for as long as he continued to operate safely.

Similar provisions giving the Secretary various types of waiver authority were enacted as parts of the Motor Carrier Safety Act of 1984, title II of P.L. 98-554, and the Commercial Motor Vehicle Safety Act of 1986, title XII of P.L. 99-570.

Section 4. Hours of Service and Truck Brakes

(a) Truck Drivers' Hours of Service and Onboard Monitoring Devices.

Under existing Federal safety regulations, commercial drivers are not supposed to drive more than 10 hours at a stretch or 60 hours in a week. These regulations also require drivers to use paper log books to record their driving and service times for enforcement purposes. These limits were imposed because drivers who drive longer hours are likely to become fatigued and fatigued drivers present a safety risk. Testimony at Commerce committee hearings has indicated that there is widespread falsification of these log books. An alternative to the ineffective log book system is the onboard recorder, which records driver hours and driving speed.

Subsection (a) of section 4 would require DOT to initiate within 3 months, and complete within 12 months, of enactment, a rulemaking proceeding on the need to adopt methods for improving safety with respect to the compliance of truck drivers with hours of service regulations. The rulemaking would include an examination of the merits of onboard monitoring devices for recording truck driver driving time and speed. The rulemaking would not have to result in the issuance of performance standards requiring onboard recording devices. It is presumed that DOT would establish such standards if its investigation showed they were warranted, however. If devices are ultimately required, they are not to be used to harass drivers, but could be used to monitor productivity of drivers.

(b) DOT Report to Congress on Truck Brakes.

In March 1987, DOT completed a Congressionally ordered study of truck braking performance. The study concluded that among all vehicle-related topics, efforts to improve truck brake systems should receive the highest priority. The study estimated that brake system performance could be involved as a contributing factor in up to one-third of all truck accidents.

Subsection (b) of section 4 would require DOT to build upon this study by completing a report to Congress on methods for improving truck brake performance. The report would be a comprehensive one. It would address basic brake problems, such as the compatibility between tractor brakes and trailer brakes, and uniform manu-

facturer labeling of replacement brake parts. It would also address antilock braking systems.

An antilock braking system prevents sustained lock-up of any wheel under its control. Wheel lock frequency occurs in quick ("panic") stop situations and is especially likely on wet or icy roadways. A locked wheel loses its braking force and loses its directional reference (i.e., does not care which direction it is going). This can lead to a variety of problems including jacknifing and steering loss.

DOT wrote a rule requiring antilock brakes in newly manufactured tractors and trailers in the mid-1970's. The antilock brakes available at that time were primitive. When these primitive antilock brakes failed, the DOT rule was struck down by the courts. In the intervening years, however, a new generation of antilock brakes has been developed and is widely used in Great Britain and on the European Continent.

The report to Congress required under section 4(b) would assess the European experience with antilocks. It would also assess the results of a federally funded fleet test of antilocks. DOT was given $1,250,000 in fiscal year 1987 for fleet tests of antilocks. The House-passed DOT fiscal year 1988 appropriations bill would provide an additional $1,550,000 for such testing. The report would be due by September 30, 1988.

(c) Oversight Hearings on Truck Brakes.

This subsection would require, no later than October 31, 1988, each of the appropriate authorizing committees of the Congress to conduct an oversight hearing to obtain public testimony concerning DOT's report to Congress on improving truck brake performance. As one of the appropriate authorizing committees, the Committee would be one of those required to hold a hearing.

The provision is based on a similar provision in the Motor Carrier Safety Act of 1984, title II of P.L. 99-554, which required the appropriate authorizing committees to conduct annual oversight hearings on DOT's implementation of that Act for 5 years following its enactment.

(d) Rulemaking on Truck Brakes.

This subsection would require that DOT follow its report with a rulemaking on the need to adopt methods for improving truck braking performance. The rulemaking could commence no later than December 1, 1988, and be completed no later than September 30, 1989. The rulemaking would cover a range of braking improvements including: compatibility of tractor and trailer brakes; uniform replacement part labeling; and antilocks. As with onboard recorders, DOT would not be required to write any braking performance standards as a result of its rulemaking. It is the intent of the Committee, however, that DOT shall issue such standards if such standards would be reasonable and practicable, would meet the need for motor vehicle safety, and can be stated in objective terms. If a rule is promulgated, such rule shall take into account the need for effective enforcement.

CHANGES IN EXISTING LAW

In compliance with paragraph 12 of rule XXVI of the Standing Rules of the Senate, the Committee states that the bill as reported would make no change to existing law.

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Calender No. 514

100TH CONGRESS *1st Session*	SENATE	REPORT 100-271

METHANOL AND ALTERNATIVE FUELS PROMOTION ACT OF 1987

Mr. HOLLINGS, from the Committee on Commerce, Science, and Transportation, submitted the following

REPORT

OF THE

SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ON

S. 1518

DECEMBER 21, (legislative day, DECEMBER 15), 1987.—Ordered to be printed

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S263-33

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

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Calendar No. 514

100TH CONGRESS
1st Session

SENATE

REPORT
100-271

METHANOL AND ALTERNATIVE FUELS PROMOTION ACT OF 1987

DECEMBER 21, (legislative day, DECEMBER 15), 1987.—Ordered to be printed

Mr. HOLLINGS, from the Committee on Commerce, Science, and Transportation, submitted the following

REPORT

[To accompany S. 1518]

The Committee on Commerce, Science, and Transportation, to which was referred the bill (S. 1518) to amend the Motor Vehicle Information and Cost Savings Act to provide for the appropriate treatment of methanol and ethanol, and for other purposes, having considered the same, reports favorably thereon with an amendment in the nature of a substitute and recommends that the bill as amended do pass.

PURPOSE OF THE BILL

The purpose of the legislation is to increase the availability of automobiles powered by methanol, ethanol, and natural gas. The bill achieves this objective by amending title V of the Motor Vehicle Information and Cost Savings Act (MVICSA) (15 U.S.C. 2001 et seq.) to provide automobile manufacturers with incentives to develop automobiles powered by alternative fuels.

BACKGROUND AND NEED

The use of alternative fuels for automobiles would reduce America's dependence on imported oil, and might improve our current trade imbalance. Much of the transportation fuel consumed by the United States today is produced from crude oil, and a substantial part of this oil is imported.

In addition, the use of alternative transportation fuels might reduce unhealthy emissions, since alternative fuels generally burn more cleanly than gasoline, diesel, and industrial fuel oil.

The primary problem with the use of alternative fuels has been that manufacturers are reluctant to produce automobiles unless there is a demand for them, consumers will not purchase cars for which there is an inadequate fuel supply, and an adequate fuel supply is unlikely to be developed until there are a significant number of alternative fuel vehicles. The incentives provided in the bill are in the form of increases in the corporate average fuel economy ("CAFE") ratings of automobile manufacturers. Under the MVICSA, a manufacturer must achieve a CAFE rating set by the Secretary of Transportation (the Secretary) across all of its production to avoid the assessment of monetary penalties. The MVICSA requires manufacturers to achieve a CAFE rating of 27.5 miles-per-gallon in model years after 1985. However, by regulation, the technical feasibility of attaining that rating allows a lowering of the standard. Currently, a manufacturer must achieve a CAFE rating of 26 miles-per-gallon. Under the bill a manufacturer who produces automobiles capable of operating on alternative fuels would receive higher fuel economy ratings on those automobiles than if they were only capable of being operated on gasoline or diesel fuel. This will raise the manufacturer's overall CAFE rating and increase its ability to meet the CAFE standard set by the Secretary. Therefore, the incentives provided by the bill will encourage manufacturers to produce vehicles powered by alternative fuels, and an infrastructure will also develop to supply fuels to these vehicles.

Consumer acceptance of vehicles powered by alternative fuels has also been cited as an obstacle to the development of such vehicles. The American public is accustomed to operating automobiles powered by gasoline, and to obtain such gasoline in a manner which permits virtually unlimited operating capability for these automobiles at any time. One solution that has been suggested to remedy this situation in the short term is to provide for the development of automobiles that are capable of operating either on gasoline, an alternative fuel, or a blend of gasoline and an alternative fuel. S. 1518 contains provisions relating to these "dual fuel" vehicles. These vehicles would ensure that consumers would be able to travel anywhere, since their fuel supply could be replenished either with gasoline or an alternative fuel. At the same time, there has been concern that permitting the use of such dual fuel vehicles could undermine the CAFE standards, if a manufacturer could receive unlimited CAFE credits for producing dual fuel vehicles, while these vehicles might be operated primarily on gasoline. S. 1518, as reported, addresses this concern by placing limitations on the CAFE credits that an auto maker may receive for dual fuel vehicles.

ALTERNATIVE FUELS

The bill provides for increases in CAFE for production of automobiles powered by three alternative fuels: methanol, ethanol, and natural gas.

Methanol

Methanol today is manufactured primarily from natural gas, but it can also be produced from coal, biomass, or any other carbon-

containing material (including trash or municipal waste). A large surplus of natural gas exists in America and other countries, and this can be cheaply and easily converted to methanol. Domestic coal also can be converted to methanol; the known coal reserves in the United States exceed 489.5 billion tons.

Methanol can be blended with gasoline to enhance octane, or produced as a replacement for gasoline. The bill contemplates increases in CAFE for vehicles using high concentrations of methanol (e.g., 100 percent methanol or an 85 percent methanol/15 percent gasoline blend).

Although methanol has about one-half the energy content of gasoline per gallon, it burns more cleanly than gasoline and other fuels. Methanol produces lower nitrogen oxides and particulate emissions than gasoline. It also produces fewer and less reactive hydrocarbons which contribute to ozone (smog) in our atmosphere. Although methanol can generate formaldehyde emissions, it is expected that these will be controlled by use of an adjusted catalyst.

Methanol does corrode parts of the standard gasoline engine and has a high volatility point which makes it difficult to start in cold temperatures. However, these problems are easily corrected by replacing rubber parts and substituting certain metal coatings. By mixing gasoline or other additives with methanol (e.g., 85 percent methanol/15 percent gasoline) cold start problems are minimized. Mixing in 15 percent gasoline has the added benefit of making the methanol flame more visible to the naked eye. Cars driven in the Indianapolis 500 races use methanol because of its high efficiency and good performance.

The California Energy Commission and the Bank of America each have operated major test fleets of methanol automobiles, with very good results.

Ethanol

Ethanol, or grain alcohol, is primarily obtained from grain and other agricultural surpluses. It may be used by itself or as an octane enhancer for gasoline. Like methanol, ethanol burns more cleanly than gasoline. Although it has been used as a blend with gasoline (e.g., gasohol), use of ethanol in highly concentrated levels would require many of the same modifications to an automobile as would be necessary with methanol.

Brazil, which was severely affected by the energy crisis in 1973 because of its large dependence on imported oil, has chosen to concentrate on ethanol as an alternative fuel because of its large sugar cane crop. Almost all of its automotive fleet currently operates either on pure ethanol or on ethanol-gasoline blends.

Natural Gas

Natural gas is a high octane fuel. There are approximately 30,000 natural gas-powered automobiles operating in the United States. New Zealand, Canada, and Italy have had far more experience than the United States with natural gas powered automobiles.

Factors that may influence the number of natural gas powered vehicles produced in the United States include the time required to refill such vehicles, the costs of converting a vehicle to natural gas ($1,500–$2,000 per vehicle), and the high costs for compression

equipment at the point of distribution. Given these factors, natural gas powered automobiles are most likely to be utilized for fleet operations. Although safety concerns relating to explosions and fires have been raised, evidence shows an impressive safety record for natural gas powered vehicles.

Legislative History

S. 1518 was introduced by Senator Rockefeller on July 21, 1987 on behalf of himself and a number of cosponsors. After its introduction, all the members of the Committee joined as cosponsors, as well as almost two-thirds of the members of the Senate as of the date on which the legislation was reported.

The bill is similar to S. 1097, legislation introduced in the 99th Congress by Senator Danforth. On July 18, 1985, the Committee without objection ordered S. 1097 to be reported. S. 1097 was not considered by the full Senate.

In this Congress, the Consumer Subcommittee of the Committee held a hearing on S. 1518 on November 12, 1987. Witnesses included representatives of the Environmental Protection Agency, major automobile manufacturers, the Center for Auto Safety, the California Energy Commission, and organizations involved in supplying alternative fuels.

On November 19, 1987, the Committee met in open executive session to consider S. 1518. The Committee by voice vote unanimously agreed to an amendment in the nature of a substitute and ordered the bill, as amended, to be reported favorably.

Summary of Major Provisions

METHOD

The bill, as reported, amends the MVICSA ro provide for application of fuel economy standards to methanol, ethanol, and natural gas-powered passenger automobiles and light trucks. Since the total miles-per-gallon of each vehicle would be calculated over a smaller amount of gasoline, the miles-per-gallon rating of the vehicle would be higher than if the vehicle operated on gasoline.

The bill divides treatment of vehicles into two categories: (1) "dedicated" vehicles (which use at least 85 percent of the alternative fuel at all times); and (2) dual fuel vehicles, which are capable of operating on a range of mixtures of methanol and gasoline or ethanol and gasoline, or capable of operating on natural gas and gasoline. (Natural gas vehicles that alternate between gasoline and natural gas are defined in the bill as dual fuel vehicles, even though they would not actually operate on a fuel mixture.)

LENGTH OF PROGRAM

A manufacturer may receive 10 consecutive model years of special treatment for alternative fuel vehicles between model years 1993 and 2005. This special incentives program would sunsest in 2005, unless the Secretary extends the program for not to exceed 5 years.

CALCULATION OF THE CREDITS

The measured fuel economy of an automobile dedicated to either methanol or ethanol should be based on the gasoline content of the mixture. For purposes of this section, such mixtures are considered to be 15 percent gasoline. For example, a vehicle that compares to a vehicle achieving 26 miles-per-gallon on gasoline would achieve approximately 15 miles-per-gallon when operated on methanol. It would receive a rating of 100 miles-per-gallon for CAFE purposes ($15 \times 1/.15$).

Dual fuel vehicles are calculated under the bill for CAFE purposes assuming a 50 percent gasoline/50 percent alternative fuel usage, and that the alternative fuel contains 15 percent gasoline:

$$1 \div (.5 \div \text{mpg gas} + .5 \div (\text{mpg alt. fuel} \div .15))$$

Limitations to the permissible CAFE increase for dual fuel vehicles are imposed to preclude manufacturers from deriving extraordinary benefits from vehicles supposedly operating on alternative fuels which are in reality operating on gasoline.

OTHER PROVISIONS

In order to ensure consumer acceptance, dual fuel vehicles must have a minimum driving range of at least 250 miles when operating on methanol or ethanol. The Secretary may lower this mileage requirement to not less than a 200-mile range if achieving the longer range is not feasible.

The bill requires that manufacturers affix a label to each vehicle indicating the fuel economy of the vehicle when operated on the alternative fuel.

The bill clarifies that the lower energy content of the alternative fuels would not trigger the so-called "gas guzzler" tax under section 4064 of title 26, United States Code.

Estimated Costs

In accordance with paragraph 11(a) of rule XXVI of the Standing Rules of the Senate and section 403 of the Congressional Budget Act of 1974, the Committee provides the following cost estimate, prepared by the Congressional Budget Office.

U.S. Congress,
Congressional Budget Office,
Washington, DC, December 1, 1987.

Hon. Ernest F. Hollings,
Chairman, Committee on Commerce, Science, and Transportation, U.S. Senate, Washington, DC.

Dear Mr. Chairman: The Congressional Budget Office has reviewed S. 1518, the Methanol and Alternative Fuels Promotion Act of 1987, as ordered reported by the Senate Committee on Commerce, Science, and Transportation, November 19, 1987. CBO expects that enactment of this legislation would result in costs for the federal government of less than $100,000 over the next five years. The federal government, as well as state and local governments, might suffer some revenue losses from decreased motor fuels tax

revenues if alternative fuels are substituted for gasoline in significant amounts, but this is unlikely to occur in the next five years.

This bill would encourage the manufacture of methanol, ethanol and natural gas powered automobiles, and dual fuel automobiles, by setting standards for determining fuel economy in such a way as to increase the corporate average fuel economy of their manufacturers. Under existing law, the Secretary of Transportation prescribes average fuel economy standards for passenger automobiles, and manufacturers not in compliance are subject to fines. S. 1518 would permit manufacturers to increase their average fuel economy by producing alternative fuel vehicles, thus possibly reducing fines paid to the federal government.

Should alternative fuels be substituted for gasoline in significant amounts, Highway Trust Fund revenues and state gasoline taxes might be reduced, because these fuels are exempt from the federal motor fuels tax and receive preferential tax treatment in some states. Also, if this bill were to cause a significant increase in the demand for ethanol, the demand for corn might be increased sufficiently in future years to result in reduced outlays for federal agricultural programs.

Automobiles operated on alternative fuels are currently being used in several demonstration programs, but are not yet in widespread use. While this bill may encourage production of these vehicles, it is not likely to have a significant impact for several years. Therefore, S. 1518 is not likely to have a significant budget impact in the near future.

S. 1518 would also direct the Secretary of Transportation to submit a number of reports to the Congress, in consultation with the Secretary of Energy and the Administrator of the Environmental Protection Agency. Based on information provided by the Department of Transportation (DOT), CBO estimates that preparation of these reports would cost less than $100,000 annually, beginning in fiscal year 1992. The DOT would also incur some additional costs for promulgating new regulations required by these changes, but these are not expected to be substantial.

If you wish further details on this estimate, we will be pleased to provide them.

With best wishes.

Sincerely,

EDWARD M. GRAMLICH,
Acting Director.

REGULATORY IMPACT STATEMENT

In accordance with paragraph 11(b) of rule XXVI of the Standing Rules of the Senate, the Committee provides the following evaluation of the regulatory impact of the legislation, as reported.

NUMBER OF PERSONS COVERED

Automobile manufacturers may be subjected to additional regulations imposed by the Department of Transportation (DOT) and the Environmental Protection Agency (EPA) when producing a vehicle operating on alternative fuels. The addition of methanol, ethanol, and natural gas powered vehicles to the CAFE program ad-

ministered by DOT will expand somewhat the scope of regulation, but the Committee does not envision that such additional regulation will be excessive.

ECONOMIC IMPACT

The Committee does not envision that any significant economic impact would be imposed as a result of enactment of this bill. If, as a result of this bill, manufacturers significantly increase their production of alternative fuel vehicles, this could lead to increased use of domestic energy resources. Increased use of domestic coal, natural gas, and grain should strengthen the Nation's economy.

PRIVACY

The bill as reported would have no effect on the personal privacy of individuals affected.

PAPERWORK

The bill as reported may result in limited additional paperwork for automobile manufacturers due to additional regulations that may be issued to accommodate alternative fuel powered automobiles. In addition, DOT and the Department of Energy may incur additional paperwork burdens if it is determined that amended or additional regulations should be promulgated to stimulate the production and introduction of electric and solar-powered vehicles into commerce.

SECTION-BY-SECTION ANALYSIS

SECTION 1.—SHORT TITLE

This section states the short title of the legislation, the "Methanol and Alternative Fuels Promotion Act of 1987".

SECTION 2.—FINDINGS

This section states Congressional findings that transportation use accounts for more than 60 percent of the Nation's oil consumption; that continued reliance on foreign oil is not in the Nation's national security or economic interest; that methanol, ethanol, and natural gas are proven transportation fuels that produce positive economic results; and that conversion of part of the Nation's transportation fleet to methanol and alternative fuels would yield desirable benefits.

SECTION 3.—PURPOSES

This section states that the purposes of the Act are to provide for appropriate treatment under the MVICSA of methanol, ethanol, and natural gas powered vehicles and dual fuel automobiles, and to increase the use and production of methanol, ethanol, and natural gas and vehicles which utilize these fuels.

SECTION 4.—MANUFACTURING INCENTIVES FOR AUTOMOBILES

Subsection (a) of this section amends section 501 of the MVICSA to add new definitions.

The definition of "automobile" in section 501(5) of the MVICSA is amended to add methanol or ethanol mixtures or natural gas to the fuels which may propel automobiles, as defined in that section.

This section also adds new definitions to section 501 of the MVICSA. Methanol and ethanol powered automobiles are defined as automobiles designated to operate on mixtures of gasoline and not less than 85 percent methanol or ethanol, respectively. Natural gas powered automobiles are defined as automobiles designed to operate on natural gas. Methanol and ethanol mixtures are defined as the mixture of methanol or ethanol, respectively, used to operate a methanol or ethanol-powered automobile. Natural gas is defined as any natural gas mixture, or natural and artificial gas mixture.

A dual fuel automobile is defined as a vehicle which is capable of operating on fuel and on either methanol or ethanol, and which (when operating on either methanol or ethanol) operates as well as or better than when the automobile is operated on fuel for the entire range of mixtures (from 0.0 percent methanol or ethanol to at least 85 percent methanol or ethanol, as appropriate), or is capable of operating on natural gas and on fuel. The Committee believes this provision will increase consumer acceptance of alternative fuel vehicles, since this definition reflects a vehicle which has normal driveability characteristics and will operate efficiently on both fuels.

Further, dual fuel automobiles must achieve a minimum driving range of 250 miles when operating on an 85-percent methanol or ethanol mixture. However, the Secretary may reduce this range to 200 miles if the Secretary determines after a rulemaking proceding that it is not feasible for such dual fuel vehicles to meet the 250-mile driving range. The Secretary is to consider economic feasibility, safety, and other relevant factors in making that determination. The Secretary may not lower such driving range below 200 miles.

The Committee believes that the inclusion of a driving range in this legislation is essential to promote consumer acceptance of dual fuel vehicles. Duel fuel vehicles are intended to serve as a bridge between current technology (i.e., automobiles powered by gasoline) and future technological developments, when automobiles as powered by alternative fuels. If consumers were to be severely restricted in their use of dual fuel automobiles because the distance they could travel without being refueled was very limited, consumers would not readily accept the new technology. A range of 250 miles was adopted because it is a fairly typical travel distance for an average automobile during a work week.

Subsection (b) of this section amends section 503(a) of the MVICSA to add a new paragraph (4). This paragraph provides that a manufacturer may receive special fuel economy treatment for dual fuel automobiles, but only during a period of 10 consecutive model years. Those model years must occur during 13-year period from model year 1993 through 2005. The Committee does not, however, intend that the failure of a manufacturer to achieve a fuel economy increase during any specific year within that 10-year cycle should negate the increases which the manufacturer achieve for the other years during that cycle. However, it is the Committee's intent that, once a manufacturer begins to achieve such in-

creases, that manufacturer may only earn the increases for not more than the 9 following model years.

Subparagraph (A) of proposed paragraph (4) provides that the EPA Administrator shall calculate a manufacturer's average fuel economy under section 503(a) (1) and (2) by including in the calculation the effect of each model type when converted to dual fuel. The resulting miles-per-gallon of that model type of automobile when operated on alterntive fuel is based on the calculation provided in subparagraphs (B) and (C) of proposed paragraph (4) of section 503(d).

Subparagraph (B) of proposed paragraph (4) provides that the EPA Administrator shall also calculate the increase in CAFE rating attributable to the production of dual fuel automobiles by comparing the result of subparagraph (A) with a calculation of the same automobiles when operated on fuel (e.g., gasoline). The resulting comparison shall be used to determine the increase in CAFE that is subject to the limitations of proposed paragraphs (4) and (5).

Subparagraph (C) of proposed paragraph (4) establishes a limitation on the amount of increase in CAFE allowed a manufacturer in each year during the first 5 model years of the 10 consecutive model years during which it produces dual fuel automobiles. For each category of automobiles, such manufacturer is limited to the higher of an increase up to 1.2 miles per gallon, or the increase attributable to the production of not more than 200,000 dual fuel automobiles. If the increase in CAFE is based on the increase attributable to not more than 200,000 automobiles, the manufacturer is limited to an increase of 1.5 miles per gallon. This subparagraph is designed primarily to establish a cap on the amount of increased CAFE allowed during a particular model year from the production on dual fuel automobiles. Recognizing that the dual fuel vehicle is a transitional vehicle that might often operate on gasoline, the Committee established reasonable caps in the increase in CAFE so that the broader purposes of CAFE would remain intact.

The subparagraph is intended also to give a manufacturer certainty concerning the incentive created by the increase in CAFE. For example, several years in advance of a model year during which dual fuel vehicles are produced, a manufacturer may anticipate that production of 200,000 dual fuel automobiles would result in an increase in CAFE of 1.2 miles per gallon. However, once that model year arrives, the manufacturer might experience changed market conditions or fluctuations that would cause the 1.2 miles per gallon increase attributable to dual fuel automobile production to be reached on substantially fewer than 200,000 automobiles. It is anticipated that this provision will establish some minimal flexibility and predictability in the application of the overall cap so that such a market fluctuation would not discourage full production of automobiles that had been previously planned. Likewise, the Committee has set an outer limit on such flexibility, striking a balance with the overall goals of the CAFE standards.

Subparagraph (D) of proposed paragraph (4) sets a limitation on the amount of increase in CAFE allowed a manufacturer during the second 5 years of the 10 consecutive model years during which a manufacturer produces dual fuel automobiles. For each category of automobiles, such manufacturer is limited to the higher of an in-

crease up to 0.9 miles per gallon, or the increase attributable to the production of not more than 200,000 dual fuel automobiles. If the increase in CAFE is based on the increase attributable to not more than 200,000 automobiles, the manufacturer is limited to an increase of 1.1 miles per gallon.

The Committee anticipates that, with time, a manufacturer will gain experience and economies of scale that justify the lowering of the amount of increase in CAFE available in the second 5-year period. Also, the lowered amount of increased CAFE that is available reflects the anticipated transitional nature of the dual fuel automobile. With the passing of time and increased availability of alternative fuels, more emphasis will be placed on fully dedicated alternative fuel vehicles, the treatment of which is established in proposed paragraph (4)(A) of section 503(d). The range of between 0.9 miles per gallon or a maximum of 1.1 miles per gallon resulting from production of not more than 200,000 automobiles follows the same rationale attending the flexibility designed into subparagraph (C).

Subparagraph (E) of proposed paragraph (4) requires that the Secretary, in consultation with the Secretary of Energy and the EPA Administrator, shall complete a study regarding whether these special increases for dual fuel automobiles should be extended for up to 5 model years beyond the end of the period for which a manufacturer is eligible under subparagraph (A). This study is to be completed not later than January 15, 2000. If the Secretary determines that the increases should be extended, the Secretary shall promulgate a rule providing for such increases within 120 days after the study is submitted to the Congress. Under this subparagraph, if the Secretary determines that extension of the increases is desirable, a manufacturer could continue to have the fuel economy of its dual fuel automobiles calculated under paragraphs (4) (A) and (B) beyond the 10-year cycle specified in paragraph (4)(A) for a period of not to exceed 5 consecutive model years.

Proposed paragraph (5) of section 503(a) provides that, if the Secretary reduces the average fuel economy standard for any model year below 27.5 miles per gallon under section 502(a) of the MVICSA, any increase in average fuel economy for passenger automobiles of more than 0.7 miles per gallon to which a manufacturer of dual fuel passenger automobiles would otherwise be entitled under paragraph (4) is to be reduced by the amount of the reduction in the standard under section 502(a). However, no such increase shall be reduced to less than 0.7 miles per gallon. This will ensure that a manufacturer which has committed resources to the development of vehicles powered by alternative fuels will not have the special CAFE incentives provided under this legislation completely negated by a reduction in the overall CAFE standard. At the same time, this will ensure that a manufacturer does not benefit from such an overall reduction while simultaneously benefiting unduly from the special CAFE treatment provided by the bill, as reported.

Proposed paragraph (6) specifies that the average fuel economy of natural gas powered automobiles or dual fuel automobiles which are capable of being operated on natural gas shall be calculated on

the fuel content of the gasoline rather than on the natural gas component, if the Secretary of Energy determines that allowing such increase would significantly increase the average price of natural gas to consumers. The Secretary of Energy is to notify the Secretary of this determination.

Concerns have been raised that, regardless of whether the authority to suspend this special CAFE treatment were ever actually invoked, the possibility that this treatment might be suspended would inject uncertainty into auto manufacturer planning, and thereby distort the process for developing vehicles powered by natural gas. Testimony presented to the Committee indicates that the near term demand for alternative fuel-powered vehicles would have a *de minimis* effect on the supply of natural gas, and that therefore this demand would not affect consumer prices. The American Gas Association testified that the introduction of 1 million natural gas vehicles by the year 2010, considered an optimistic goal, would consume 100 billion cubic feet per year. This consumption is about one-half of 1 percent of the natural gas consumed in 1987 in all uses. If the authority provided in this subsection is invoked, it is the Committee's intent that automobile manufacturers should be provided with the maximum amount of time for planning purposes. It is not the Committee's intent that this provision operate to undermine the activities of automobile manufacturers after they have already invested significant resources in the planning, design, and production process for a particular model year.

Subsection (c) of this section amends section 503(d) of the MVICSA to add a new paragraph (4). Subparagraph (A) of that paragraph provides that the fuel economy of any model type which is operated on methanol or ethanol is to be based on the fuel content of the mixture used to operate the automobiles. For purposes of section 503, a gallon of such a mixture is considered to contain 15 one-hundredths of a gallon of fuel. This will ensure that the fuel economy rating of these vehicles is based on the gasoline content of the mixture. For example, if a dedicated vehicle achieves 25 miles per gallon, that vehicle when run on an 85 percent methanol/15 percent gasoline mixture would be rated at 165 miles per gallon for CAFE purposes.

Subparagraph (B) of proposed paragraph (4) provides that, in the case of a dual fuel automobile, the fuel economy of a model type is to be based on the gasoline content of the methanol or ethanol mixture used to operate the automobile. The fuel economy is to be determined by "harmonically averaging" and equally weighting the fuel economy when operated on gasoline and when operated on a methanol or ethanol mixture. An example of the manner in which this harmonic averaging would work is as follows: assuming that a dual fuel vehicle achieves 25 miles-per-gallon when operated entirely on gasoline, and that this same vehicle, when operating on a mixture of 85 percent alternative fuel/15 percent gasoline, would travel 165 miles before consuming a gallon of gasoline; utilizing the harmonic averaging required by the bill, that vehicle would achieve a rating of 40 miles-per-gallon for CAFE purposes. This harmonic averaging accounts for the proper weighting of the energy value and use of the alternative fuel with gasoline. Also, subparagraph (B) provides that a gallon of the methanol or ethanol

mixture used to operate a dual fuel automobile shall be considered to contain 15 one-hundredths of a gallon of gasoline.

Subparagraph (C) of proposed paragraph (4) provides that the fuel economy of natural gas-powered automobiles or dual fuel automobiles when operated on natural gas is to be based on the calculated gasoline content of the natural gas. Although these dual fuel vehicles would not actually operate on a mixture of natural gas and gasoline, to ensure consistency of calculations the bill specifies that 100 cubic feet of natural gas are considered to contain 0.823 gallons equivalent of natural gas, and that a gallon equivalent of natural gas is considered to contain 15 one-hundredths of a gallon of fuel.

SECTION 5.—AUTOMOBILE LABELING

This section amends the labeling requirements of section 506 of the MVICSA to require that labels affixed to new vehicles show the fuel economy of the vehicle when operated on the methanol or ethanol mixture, or natural gas, calculated under section 503(d)(4) (as added by this legislation), multipled by 15 percent (the gasoline content of the fuel). Fuel economy labels are already required by law, and this section would require that vehicles have labels showing the fuel economy rating of the vehicle when operated on the alternative fuel. The Committee understands that it is likely that manufacturers will provide information regarding the relative energy values of alternative fuels and gasoline.

SECTION 6.—REPORT

This section amends section 512 of the MVICSA to require that the Secretary, after consultation with the Secretary of Energy, submit a report to the Congress in each year beginning in 1993. The report must include information regarding the effects of this legislation on the consumption of methanol, ethanol, natural gas, and gasoline. These effects are to be shown on an industry-wide basis, and to be shown with respect to each specific manufacturer. The report is also to provide information on any effects of this legislation on the achievement of fuel economy standards, also on an industry-wide and manufacturer-specific basis. The section also requires that the Secretary transmit, in consultation with the EPA Administrator, recommended changes regarding the definition of dual fuel automobiles to reflect technological changes.

SECTION 7.—ELECTRIC VEHICLES

This section provides that the Secretary, in consultation with the Secretary of Energy, shall conduct a comprehensive study and investigation regarding whether current regulations with respect to electric vehicles should be amended, or additional regulations promulgated, to stimulate the production and introduction of such vehicles into commerce. These regulations appear at part 474 of title 10, Code of Federal Regulations, and set forth a formula with regard to CAFE standards and electric vehicles. The Committee notes that these regulations expire in 1987, and believes that it would be desirable if these regulations were extended during the study required by this section, until a determination can be made

as to the appropriate action (if any) to be taken in the future. This investigation is also to consider and report whether regulations to encourage the development of solar-powered vehicles are feasible and desirable.

The results of the study undertaken under this section must be transmitted to the Congress not later than 1 year after the date of enactment of this legislation. If the Secretaries determine that such regulations should be amended, they are to begin a rulemaking for that purpose.

SECTION 8.—CONFORMING AMENDMENT TO THE INTERNAL REVENUE CODE OF 1986

This section makes a conforming amendment to section 4064(b) of the Internal Revenue Code of 1986 to specify that the determination of the tax to be imposed under that section with regard to methanol, ethanol, or natural gas powered automobiles or dual fuel automobiles is to be based on the fuel economy rating established under section 503(d)(4) of the MVICSA, as added by this legislation. This conforming amendment will clarify that the lower energy content of the alternative fuels covered by this bill do not trigger the so-called "gas guzzler" tax provisions of current law.

SECTION 9.—CONFORMING AMENDMENT TO THE MOTOR VEHICLE INFORMATION AND COST SAVINGS ACT

This section amends section 502(e) of the MVISCA to provide that the Secretary shall not consider the fuel economy of methanol, ethanol, or natural gas powered automobiles in determining maximum feasible average fuel economy. Further, the Secretary would be requred to consider dual fuel automobiles to be operated exclusively on gasoline in determining maximum feasible average fuel economy.

The Committee believes that, in order to promote fully the development of methanol, ethanol, and natural gas powered automobiles, the technology feasibility requirement of section 502(e) of the MVICSA should reflect the experimental nature of such development.

Changes in Existing Law

In compliance with paragraph 12 of rule XXVI of the Standing Rules of the Senate, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new material is printed in italic, existing law in which no change is proposed is shown in roman):

Motor Vehicle Information and Cost Savings Act

Section 501 of that Act

DEFINITIONS

Sec. 501. For purposes of this part:

(1) The term "automobile" means any 4-wheeled vehicle propelled by fuel, *or by methanol mixture, ethanol mixture, or natural gas* which is manufactured primarily for use on public streets,

roads, and highways (except any vehicle operated exclusively on a rail or rails), and

(A) which is rated at 6,000 lbs. gross vehicle weight or less, or

(B) which—

(i) is rated at more than 6,000 lbs. gross vehicle weight but less than 10,000 lbs. gross vehicle weight,

(ii) is a type of vehicle for which the Secretary determines, by rule, average fuel economy standards under this part are feasible, and

(iii) is a type of vehicle for which the Secretary determines, by rule, average fuel economy standards will result in significant energy conservation, or is a type of vehicle which the Secretary determines is substantially used for the same purposes as vehicles described in subparagraph (A) of this paragraph.

The Secretary may prescribe such rules as may be necessary to implement this paragraph.

(2) through (14) * * *

(15) The term "methanol mixture" means the mixture of methanol with fuel, if any, used to operate a methanol powered automobile.

(16) The term "methanol powered automobile" means an automobile designed to operate on not less than 85 percent methanol.

(17) The term "ethanol mixture" means the mixture of ethanol with fuel, if any, used to operate an ethanol powered automobile.

(18) The term "ethanol powered automobile" means an automobile designed to operate on not less than 85 percent ethanol.

(19) The term "natural gas" means either natural gas mixture, or any mixture of natural and artifical gas.

(20) The term "natural gas powered automobile" means an automobile designed to operate on natural gas.

(21) The term "dual fuel automobile" means an automobile which—

(A) is capable of operating on fuel and on either methanol or ethanol;

(B) when it operates on either methanol or ethanol, operates as well as or better than when such automobile is operated on fuel for the entire range of mixtures (from 0.0 percent methanol or ethanol to at least 85 percent methanol or ethanol, as appropriate), or is capable of operating on natural gas and on fuel; and

(C)(i) achieves a driving range of at least 250 miles, based upon the combined EPA city/highway fuel economy, as determined for average fuel economy purposes for such automobile when operating on an 85 percent methanol mixture; or (ii) achieves a driving range of at least 250 miles, based upon the combined EPA city/highway fuel economy, as determined for average fuel economy purposes for such automobile when operating on an 85 percent ethanol mixture.

The driving range for dual fuel automobiles operating on such methanol mixture or ethanol mixture specified in this paragraph may be lowered by the Secretary after a rulemaking proceeding, if the Secretary determines, as a result of such proceeding, that it is not feasible for such dual fuel automobiles to achieve such driving

range, considering economic practicability, safety, and other factors determined by the Secretary to be relevant, but in no event shall the Secretary lower such requirement below 200 miles, based upon the combined EPA city/highway fuel economy.

Section 502 of that Act

AVERAGE FUEL ECONOMY STANDARDS APPLICABLE TO EACH MANUFACTURER

SEC. 502. (a) * * *

(b) through (d) * * *

(e) For purposes of this section in determining maximum feasible average fuel economy, the Secretary shall consider—

(1) technological feasibility;

(2) economic feasibility;

(3) the effect of other Federal motor vehicle standards on fuel economy; and

(4) the need of the Nation to conserve energy.

For purposes of this subsection, the Secretary shall not consider the fuel economy of methanol, ethanol, or natural gas powered automobiles, and the Secretary shall consider dual fuel automobiles to be operated exclusively on gasoline.

(f) through (l) * * *

Section 503 of that Act

DETERMINATION OF AVERAGE FUEL ECONOMY

SEC. 503. (a)(1) * * *

(2) through (3) * * *

(4)(A) In any of the consecutive model years beginning with the first model year after model year 1992 in which a manufacturer manufactures dual fuel automobiles and ending with the 10th model year or model year 2005, whichever occurs first, the EPA Administrator shall calculate the manufacturer's average fuel economy under paragraphs (1) and (2) by including as the denominator of the term for each model type of dual fuel automobile the fuel economy calculated pursuant to subsection (d)(4).

(B) For any model year to which a calculation under subparagraph (A) applies, the EPA Administrator shall calculate the increase in a manufacturer's average fuel economy attributable to dual fuel automobiles by subtracting from the manufacturer's average fuel economy calculated under subparagraph (A) a number equal to what the manufacturer's average fuel economy would be if it were calculated by the formula in paragraphs (1) and (2) by including as the denominator for each model type of dual fuel automobile the fuel economy when such automobiles are operated on fuel.

(C) In any of the first 5 of the consecutive model years specified in subparagraph (A), any such manufacturer shall be entitled to receive an increase in its average fuel economy, based on such manufacturer's production of dual fuel automobiles, as calculated under this paragraph. For each category of automobiles, such increase shall be the higher of—

(i) up to 1.2 miles per gallon; or

(ii) the increase attributable to the production of not more than 200,000 dual fuel automobiles, except that such increase shall not exceed 1.5 miles per gallon.

(D) In any of the second 5 of the consecutive model years specified in subparagraph (A), any such manufacturer shall be entitled to receive an increase in its average fuel economy, based on such manufacturer's production of dual fuel automobiles, as calculated under this paragraph. For each category of automobiles, such increase shall be the higher of—

(i) up to 0.9 miles per gallon; or

(ii) the increase attributable to the production of not more than 200,000 dual fuel automobiles, except that such increase shall not exceed 1.1 miles per gallon.

(E) Not later than January 15, 2000, the Secretary shall, in consultation with the Secretary of Energy and the EPA Administrator, complete and submit to Congress a study of whether the increases permitted in subparagraph (B), as limited by subparagraph (D), should be extended for an additional period of up to 5 consecutive model years beyond the end of the period for which each manufacturer is eligible under subparagraph (A). The Secretary shall include in such study recommendations regarding such increases. If the Secretary determines that such increases should be extended, the Secretary shall, within 120 days after submission of such study, promulgate a rule extending the availability of such increases.

(5) Notwithstanding any other provision of this subsection, if the Secretary reduces the average fuel economy standard applicable to passenger automobiles for any model year below 27.5 miles per gallon, any increase in average fuel economy for passenger automobiles of more than 0.7 miles per gallon to which a manufacturer of dual fuel passenger automobiles would otherwise be entitled in that year pursuant to paragraph (4) shall be reduced by an amount equal to the amount of such reduction in the standard, except that such increases shall not be reduced to less than 0.7 miles per gallon.

(6) Notwithstanding any other provision of this subsection, the average fuel economy of any manufacturer of natural gas powered automobiles or dual fuel automobiles which are capable of being operated on natural gas shall be calculated for a model year as if the vehicles were operated on fuel, if the Secretary of Energy determines, and notifies the Secretary, that entitling any manufacturer in that model year to an increase in average fuel economy calculated under paragraph (4) is likely to result in a significant increase in the average price of natural gas to consumers.

(b) through (c) * * *

(d)(1) * * *

(2) through (3) * * *

(4)(A) If a manufacturer manufactures any model type that is operated on methanol or ethanol, the measured fuel economy of that model type shall be based on the fuel content of the methanol or ethanol mixture used to operate such autombiles. For purposes of this section, a gallon of the methanol or ethanol mixture used to operate such automobiles shall be considered to contain 15 one-hundredths of a gallon of fuel.

(B) If a manufacturer manufactures any model type of dual fuel automobile, the measured fuel economy of that model type shall be

based on the fuel content of the methanol or ethanol mixture used to operate such automobiles. The fuel economy of a dual fuel automobile shall be determined by harmonically averaging (and equally weighting) the fuel economy when operated on fuel and when operated on a methanol or ethanol mixture. For purposes of this section, a gallon of the methanol or ethanol mixture used to operate such automobilies shall be considered to contain 15 one-hundredths of a gallon of fuel.

(C) If a manufacturer manufactures natural gas powered automobiles or dual fuel automobiles when operated on nutural gas, the fuel economy shall be based on the fuel content of the natural gas. For purposes of this section, 100 cubic feet of the natural gas used to operate such autombiles shall be considered to contain 0.823 gallons equivalent of natural gas. A gallon equivalent of natural gas shall be considered to contain 15 one-hundredths of a gallon of fuel.

(e) through (f) * * *

Section 506 of that Act

LABELING

SEC. 506. (a)(1) Except as otherwise provided in paragraph (2), each manufacturer shall cause to be affixed, and each dealer shall cause to be maintained, on each automobile manufactured in any model year after model year 1976, in a prominent place, a label—

(A) indicating—

(i) the fuel economy of such automobile,

(ii) the estimated annual fuel cost associated with the operation of such automobile, [and]

(iii) the range of fuel economy of comparable automobiles (whether or not manufactured by such manufacturer),

(iv) in the case of a methanol, ethanol, or natural gas powered automobile, the fuel economy of such automobiles when operated on the methanol or ethanol mixture, or natural gas, as the case may be, calculated under section 503(d)(4), multiplied by 15 percent, and

(v) in the case of a dual fuel automobile, the fuel economy of such automobile calculated under section 503(d)(4), multiplied by 15 percent, as well as the fuel economy of such automobile when operated on gasoline,

as determined in accordance with rules of the EPA Administrator,

(B) through (D) * * *

(2) through (3) * * *

(b) through (e) * * *

Section 512 of that Act

REPORTS TO CONGRESS

SEC. 512. (a) * * *

(b) through (c) * * *

(d)(1) Beginning in January 1993 and annually thereafter, the Secretary, after consultation with the Secretary of Energy, shall submit to the Congress a report which contains the information specified in paragraph (2) of this subsection, together with such

other information and recommendations as the Secretary considers necessary or appropriate to carry out the purposes of the Methanol and Alternative Fuels Promotion Act of 1987.

(2) As part of such report, the Secretary shall—

(A) include information regarding the effects, if any, of the amendments made by such Act on the consumption of methanol, ethanol, natural gas, and gasoline on an industrywide and manufacturer-specific basis;

(B) in consultation with the EPA Administrator, include information regarding the effects, if any, of the amendments made by such Act on the achievement of fuel economy standards specified in section 502 on an industrywide and manufacturer-specific basis; and

(C) in consultation with the EPA Administrator, recommended changes in the definition of "dual fuel automobile" in section 501(21) as technological developments warrant, in order to promote the actual use of methanol and ethanol, and to further the purposes of the Methanol and Alternative Fuels Promotion Act of 1987.

INTERNAL REVENUE CODE OF 1986

Section 4064 of that Act

SEC. 4064. GAS GUZZLER TAX.

(a) * * *

(b) DEFINITIONS.—For purposes of this section—

(1) through (7) * * *

(8) EXCEPTION FOR ALTERNATIVE FUELS.—The determination of the tax to be imposed with respect to a methanol, ethanol, or natural gas powered automobile or dual fuel automobile shall be based on the fuel economy rating established under section 503(d)(4) of the Motor Vehicle Information and Cost Savings Act.

(c) through (d) * * *

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